

OIB - DC-8 11/10/16 Science Report

Aircraft:

[DC-8](#) ([See full schedule](#))

Date:

Thursday, November 10, 2016

Mission:

OIB

Mission Location:

Punta Arenas, Chile

Mission Summary:

Mission: North Peninsula (priority: baseline)

This is a repeat flight, designed to assess dh/dt of several glaciers draining into the Larsen-A, -B, and -C embayments. From north to south, these glaciers are the Drygalski, Hektoria, Crane, Melville, Starbuck, Flask, Leppard, Attlee, Gould, Demorest, Gibbs, and Weyerhauser. In addition to these glaciers, we repeat two lines over Scar Inlet, several flowlines on the Larsen-C Ice Shelf, and four north-south tie lines over the Larsen-C, including overflights of three AWS stations and several areas of stagnant ice so that contributions of surface processes to dh/dt can be assessed independently of dynamic processes. Finally we overfly the Gipps (in the south) and Bawden (north) Ice Rises on the eastern edge of the Larsen-C, since these may contribute to the stability of the ice shelf.

The Antarctic Peninsula has some of the most difficult weather on the entire Antarctic continent, and this season has been no exception. It also happens to fall in a part of the continent where little or no high-resolution weather satellite imagery is available during our morning flight decision window. This forces us to rely almost solely on forecast models for this region, which often do not perform well there because of the complex terrain. This morning we had the benefit of one rather limited, though positive, weather satellite image, and of several positive forecasts which we have had several weeks to compare with imagery to assess their fidelity under a variety of circumstances. The forecasts showed a cessation for today of the strong westerlies that typically blanket the Peninsula in cloud due to orographic uplift, as well as light foehn winds on the lee side which we expected to keep the Weddell Sea coastal fog at bay. We encountered the clear and calm conditions we expected, losing only small amounts of science data at a few spots on the ridgeline, and near the calving front of the northern Larsen-C ice shelf, where we encountered a few clouds.

All instruments performed well, with the exception of the FLIR camera. The FLIR encountered a data system settings issue which resulted in the loss of all data from roughly the first half of the mission. We do not expect a repetition of this particular problem.

We conducted a ramp pass at 2000' on departure.

Data volumes:

AIRGrav: 5 Gb

ATM: 39 Gb

CAMBOT: 35 Gb

DMS: 79 Gb

FLIR: 4 Gb (lost first half of mission due to data system issue)

Ku-Band Radar: 699 Gb

MCoRDS: 2.7 Tb

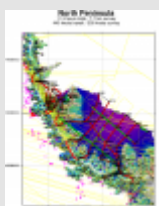
Narrow Swath ATM: 0 Gb (idle today)

Snow Radar: 699 Gb

total data collection time: 7.0 hrs

Images:

Map of North Peninsula mission



[Read more](#)

Brabant Island



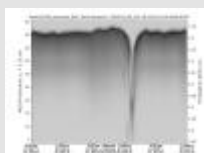
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Larsen-C rift



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Radar image of rift



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Peninsula mountains



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Submitted by:

John Sonntag on 11/13/16

Related Flight Report:

DC-8 11/10/16

Flight Number:

1157

Payload Configuration:

OIB-ATM NAV/ATM GPS/ATM-T5/T6/ATM FLIR/ATM CAMBOT MCoRDS/SNOW/Ku RADAR DMS/POS-AV GRAVIMETER & ARMAS (piggyback)

Nav Data Collected:

Yes

Total Flight Time:

10.9 hours

Comments:

Good flight. A ramp overpass calibration was flown at 2000 ft AGL at the start of the mission. This was a repeat flight from previous years, designed to assess dh/dt of several glaciers draining into the Larsen-A, -B, and -C embayments. All the science instruments performed well. Weather was excellent with some minor cloud coverage. The aircraft came back with two writeups. Postflight replaced a bid wire on the #2 fuel pressure gauge to repair that. Also, did some work on the landing gear handle resistance writeup. Both checked good for flight.

Submitted by:

Timothy Moes on 11/13/16

Flight Segments:

From:	SCCI - Punta Arenas	To:	SCCI
Start:	11/10/16 13:03 Z	Finish:	11/10/16 23:59 Z
Flight Time:	10.9 hours		
Log Number:	178010	PI:	Nathan Kurtz
Funding Source:	Bruce Tagg - NASA - SMD - ESD Airborne Science Program		
Purpose of Flight:	Science		

Flight Hour Summary:

	178010
Flight Hours Approved in SOFRS	300
Total Used	306.9
Total Remaining	-6.9

178010 Flight Reports

Date	Flt #	Purpose of Flight	Duration	Running Total	Hours Remaining
10/04/16	1135	Science	4	4	296
10/05/16	1136	Science	2.7	6.7	293.3
10/12/16	1138	Transit	10.9	17.6	282.4
10/12/16	1139	Transit	3	20.6	279.4
10/14/16 - 10/15/16	1140	Science	10.9	31.5	268.5
10/15/16 - 10/16/16	1141	Science	11.8	43.3	256.7
10/17/16 - 10/18/16	1142	Science	11.8	55.1	244.9
10/20/16 - 10/21/16	1143	Science	11.4	66.5	233.5
10/22/16	1144	Science	11	77.5	222.5
10/24/16 - 10/25/16	1145	Science	11.5	89	211
10/25/16 - 10/26/16	1146	Science	11.3	100.3	199.7
10/26/16 - 10/27/16	1147	Science	12.1	112.4	187.6
10/27/16 - 10/28/16	1148	Science	11.5	123.9	176.1
10/28/16 - 10/29/16	1149	Science	11	134.9	165.1
10/31/16 - 11/01/16	1150	Science	11	145.9	154.1
11/02/16 - 11/03/16	1151	Science	11.2	157.1	142.9
11/03/16 - 11/04/16	1152	Science	11.5	168.6	131.4
11/04/16 - 11/05/16	1153	Science	11.1	179.7	120.3
11/05/16 - 11/06/16	1154	Science	11.7	191.4	108.6
11/07/16 - 11/08/16	1155	Science	11.2	202.6	97.4
11/09/16 - 11/10/16	1156	Science	11.7	214.3	85.7
11/10/16	1157	Science	10.9	225.2	74.8

11/11/16 - 11/12/16	1158	Science	11.3	236.5	63.5
11/12/16 - 11/13/16	1159	Science	11.1	247.6	52.4
11/14/16	1160	Science	10.9	258.5	41.5
11/15/16 - 11/16/16	1161	Science	11.6	270.1	29.9
11/17/16 - 11/18/16	1162	Science	11.1	281.2	18.8
11/18/16 - 11/19/16	1163	Science	11.1	292.3	7.7
11/21/16	1165	Transit	11.6	303.9	-3.9
11/21/16	1164	Transit	3	306.9	-6.9

Flight Reports began being entered into this system as of 2012 flights. If there were flights flown under an earlier log number the flight reports are not available online.

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Page Last Updated: April 22,
2017

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